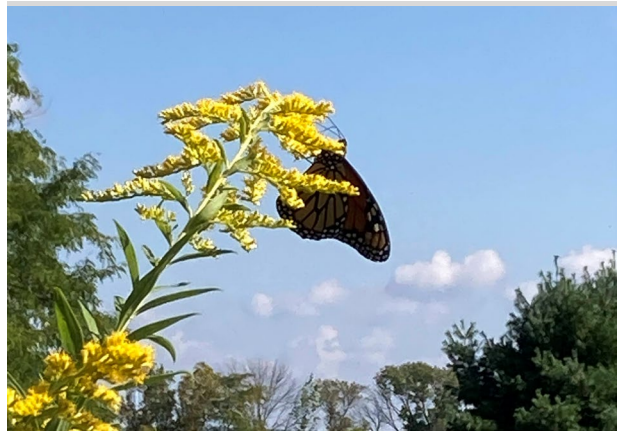
USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

State Tech Committee Update



Brianne Lowe
State Biologist
USDA-NRCS

brianne.lowe@usda.gov

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Wildlife Partner Meeting

August 21, 2024 (Virtual)

- Purdue Extension
  - Brian MacGowan
  - Jarred Brooke
- Division of Fish and Wildlife
  - Josh Griffin
- The Nature Conservancy
  - John Shuey
- US Fish and Wildlife Service
  - Jeff Kiefer
- Pollinator Partnership
  - Mary Welz

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647 Early Successional Habitat Management

- Indiana Usage
  - Primary CRP Management Activity standard
  - Typical for grassland and early successional woodland practices
  - References to other practices

Figure 1. Strip disking creates open spaces in grass stands and stimulates seed producing plants.

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647 Early Successional Habitat Management

- National Standard Updated
  - Greatly simplified
  - Less specific types of activities

Early successional habitat · photo by Credit: D.J. McNeil

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647 Early Successional Habitat Management

- Activities Indiana Added Directly to 647
  - Natural Succession*
  - Strip Disking
  - Strip Spraying
  - Edge Feathering
  - Strip Mowing*

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647 Early Successional Habitat Management

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Habitat Management Strip Spraying

Natural Resources Conservation Service - Indiana - October 2024 (ver. 1.0)

647 - Early Successional Habitat Management

The purpose of early successional habitat management is to reset vegetation development to annual and herbaceous vegetation, reducing thatch and dead vegetation, removing dense or mature woody encroachment, and creating structural diversity. Management enhances the wildlife habitat value by increasing networks of open ground under the grass canopy, a flush of shrubby cover, and by encouraging a diverse forb/legume community. The insects associated with annual weed communities provide critical nutrients, including protein, and essential amino acids for growing nestlings and chicks.

Strip spaying is the targeted us of herbicides to reduce dense vegetation in alternating linear strips or blocks. It is most frequently used to reduce grass density, releases forb seeds, or set back woody encroachment. Consult with your wildlife biologist or Cooperative Extension Specialist for herbicide recommendations.

SPECIFICATIONS

The following are specifications for using Strip Spraying to manage early successional habitat:

- Grassland fields must be established for a minimum of three (3) years before initiating strip spraying, unless either of the following conditions exist.
  - If vegetation has not established as expected, has not surpassed targeted successional status, or is currently providing desired habitat, then delay management. Contact your local NRCS office prior to delaying implementation.
  - If grass or other vegetation establishes quickly, overtakes the planting, and diminishes habitat for wildlife, consider management earlier than three (3) years. Contact your local NRCS office prior to implementing this practice early.
- Strip Spraying will not exceed half (½) of the habitat acreage each year. To maximize wildlife benefits it is better to only disturb a maximum of one-third (⅓) of the area each of three (3) years, if feasible.
- Follow all Federal, State and Local guidelines and Manufacturer's label rates when applying herbicides.
- Time spraying to protect threatened and endangered species and migratory birds. Do not perform disking operations from April 1 through August 1 to protect the primary nesting period for grassland bird species.
- Protect environmentally sensitive areas, including:
  - Critical areas, concentrated flow areas, or other areas where gully erosion is likely.
    - Perform strip sprayed operations along field contours, or across the slope, when practical.
    - Erosion from sprayed strips will not exceed tolerable limits.
  - Acreage within the first 20 feet of water resources to avoid water quality resource concerns.
    - Use appropriate setbacks and follow all label requirements.
  - Conservation practices including grassed waterways, riparian forest buffers, or areas planted to trees and/or shrubs, will not be sprayed.
  - Areas with invasive or noxious weeds that will be exacerbated by strip spraying will be avoided.

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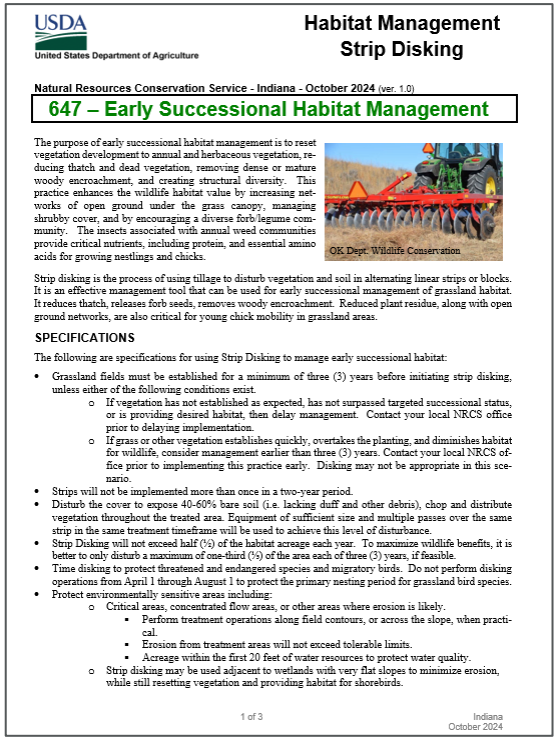

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Habitat Management Strip Disking

Natural Resources Conservation Service - Indiana - October 2024 (ver. 1.0)

647 – Early Successional Habitat Management

The purpose of early successional habitat management is to reset vegetation development to annual and herbaceous vegetation, reducing thatch and dead vegetation, removing dense or mature woody encroachment, and creating structural diversity. This practice enhances the wildlife habitat value by increasing networks of open ground under the grass canopy, managing shrubby cover, and by encouraging a diverse forb/legume community. The insects associated with annual weed communities provide critical nutrients, including protein, and essential amino acids for growing nestlings and chicks.

OK Dept. Wildlife Conservation

Strip disking is the process of using tillage to disturb vegetation and soil in alternating linear strips or blocks. It is an effective management tool that can be used for early successional management of grassland habitat. It reduces thatch, releases forb seeds, removes woody encroachment. Reduced plant residue, along with open ground networks, are also critical for young chick mobility in grassland areas.

SPECIFICATIONS

The following are specifications for using Strip Disking to manage early successional habitat:

- Grassland fields must be established for a minimum of three (3) years before initiating strip disking, unless either of the following conditions exist.
  - If vegetation has not established as expected, has not surpassed targeted successional status, or is providing desired habitat, then delay management. Contact your local NRCS office prior to delaying implementation.
  - If grass or other vegetation establishes quickly, overtakes the planting, and diminishes habitat for wildlife, consider management earlier than three (3) years. Contact your local NRCS office prior to implementing this practice early. Disking may not be appropriate in this scenario.
- Strips will not be implemented more than once in a two-year period.
- Disturb the cover to expose 40-60% bare soil (i.e. lacking duff and other debris), chop and distribute vegetation throughout the treated area. Equipment of sufficient size and multiple passes over the same strip in the same treatment timeframe will be used to achieve this level of disturbance.
- Strip Disking will not exceed half (½) of the habitat acreage each year. To maximize wildlife benefits, it is better to only disturb a maximum of one-third (⅓) of the area each of three (3) years, if feasible.
- Time disking to protect threatened and endangered species and migratory birds. Do not perform disking operations from April 1 through August 1 to protect the primary nesting period for grassland bird species.
- Protect environmentally sensitive areas including:
  - Critical areas, concentrated flow areas, or other areas where erosion is likely.
    - Perform treatment operations along field contours, or across the slope, when practical.
    - Erosion from treatment areas will not exceed tolerable limits.
    - Acreage within the first 20 feet of water resources to protect water quality.
  - Strip disking may be used adjacent to wetlands with very flat slopes to minimize erosion, while still resetting vegetation and providing habitat for shorebirds.

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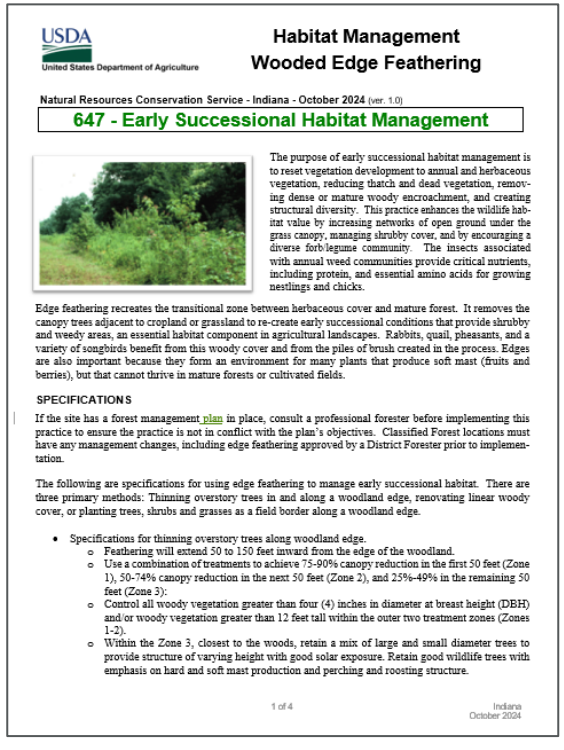

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Habitat Management Wooded Edge Feathering

Natural Resources Conservation Service - Indiana - October 2024 (ver. 1.0)

647 - Early Successional Habitat Management

The purpose of early successional habitat management is to reset vegetation development to annual and herbaceous vegetation, reducing thatch and dead vegetation, removing dense or mature woody encroachment, and creating structural diversity. This practice enhances the wildlife habitat value by increasing networks of open ground under the grass canopy, managing shrubby cover, and by encouraging a diverse forb/legume community. The insects associated with annual weed communities provide critical nutrients, including protein, and essential amino acids for growing nestlings and chicks.

Edge feathering recreates the transitional zone between herbaceous cover and mature forest. It removes the canopy trees adjacent to cropland or grassland to re-create early successional conditions that provide shrubby and weedy areas, an essential habitat component in agricultural landscapes. Rabbits, quail, pheasants, and a variety of songbirds benefit from this woody cover and from the piles of brush created in the process. Edges are also important because they form an environment for many plants that produce soft mast (fruits and berries), but that cannot thrive in mature forests or cultivated fields.

SPECIFICATIONS

If the site has a forest management plan in place, consult a professional forester before implementing this practice to ensure the practice is not in conflict with the plan's objectives. Classified Forest locations must have any management changes, including edge feathering approved by a District Forester prior to implementation.

The following are specifications for using edge feathering to manage early successional habitat. There are three primary methods: Thinning overstory trees in and along a woodland edge, renovating linear woody cover, or planting trees, shrubs and grasses as a field border along a woodland edge.

- Specifications for thinning overstory trees along woodland edge.
  - Feathering will extend 50 to 150 feet inward from the edge of the woodland.
  - Use a combination of treatments to achieve 75-90% canopy reduction in the first 50 feet (Zone 1), 50-74% canopy reduction in the next 50 feet (Zone 2), and 25%-49% in the remaining 50 feet (Zone 3):
  - Control all woody vegetation greater than four (4) inches in diameter at breast height (DBH) and/or woody vegetation greater than 12 feet tall within the outer two treatment zones (Zones 1-2).
  - Within the Zone 3, closest to the woods, retain a mix of large and small diameter trees to provide structure of varying height with good solar exposure. Retain good wildlife trees with emphasis on hard and soft mast production and perching and roosting structure.

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647 Early Successional Habitat Management

- Activities that Reference Other Standards
  - Interseeding (CPS 420)
  - Prescribed Fire (CPS 338)
  - Prescribed Grazing (CPS 528)
  - Forest Regeneration Openings (CPS 666)
  - Annual Grains for Early Successional Habitat* (SAFE CPS 645)
  - Other

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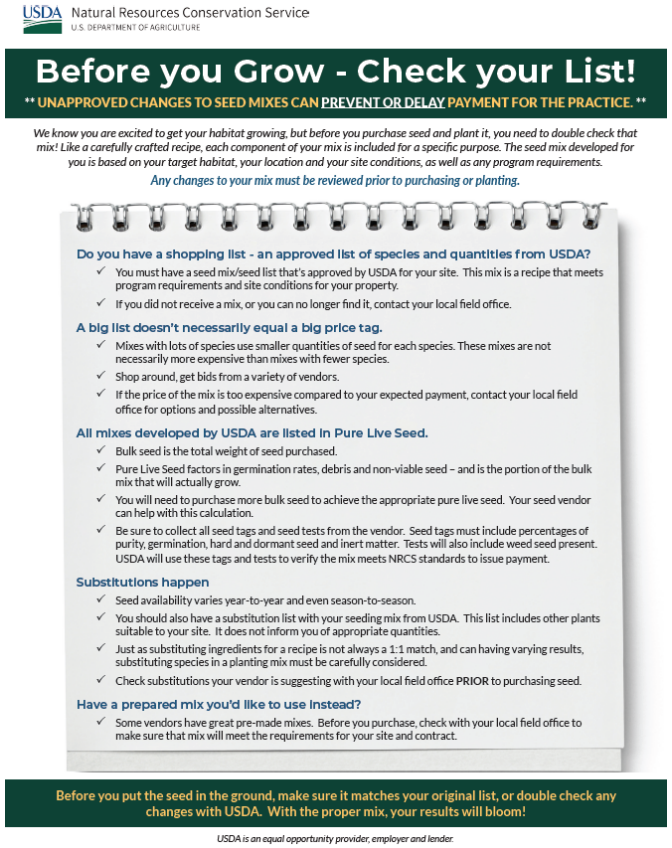
Seeding Updates

- Additional Species Added to Calculator
  - Calico Penstemon
  - Maryland Senna
  - Beak Grass
  - Rough Dropseed



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Before you Grow - Check your List!

** UNAPPROVED CHANGES TO SEED MIXES CAN PREVENT OR DELAY PAYMENT FOR THE PRACTICE. **

We know you are excited to get your habitat growing, but before you purchase seed and plant it, you need to double check that mix! Like a carefully crafted recipe, each component of your mix is included for a specific purpose. The seed mix developed for you is based on your target habitat, your location and your site conditions, as well as any program requirements.

Any changes to your mix must be reviewed prior to purchasing or planting.

Do you have a shopping list - an approved list of species and quantities from USDA?

- ✓ You must have a seed mix/seed list that's approved by USDA for your site. This mix is a recipe that meets program requirements and site conditions for your property.
- ✓ If you did not receive a mix, or you can no longer find it, contact your local field office.

A big list doesn't necessarily equal a big price tag.

- ✓ Mixes with lots of species use smaller quantities of seed for each species. These mixes are not necessarily more expensive than mixes with fewer species.
- ✓ Shop around, get bids from a variety of vendors.
- ✓ If the price of the mix is too expensive compared to your expected payment, contact your local field office for options and possible alternatives.

All mixes developed by USDA are listed in Pure Live Seed.

- ✓ Bulk seed is the total weight of seed purchased.
- ✓ Pure Live Seed factors in germination rates, debris and non-viable seed – and is the portion of the bulk mix that will actually grow.
- ✓ You will need to purchase more bulk seed to achieve the appropriate pure live seed. Your seed vendor can help with this calculation.
- ✓ Be sure to collect all seed tags and seed tests from the vendor. Seed tags must include percentages of purity, germination, hard and dormant seed and inert matter. Tests will also include weed seed present. USDA will use these tags and tests to verify the mix meets NRCS standards to issue payment.

Substitutions happen

- ✓ Seed availability varies year-to-year and even season-to-season.
- ✓ You should also have a substitution list with your seeding mix from USDA. This list includes other plants suitable to your site. It does not inform you of appropriate quantities.
- ✓ Just as substituting ingredients for a recipe is not always a 1:1 match, and can having varying results, substituting species in a planting mix must be carefully considered.
- ✓ Check substitutions your vendor is suggesting with your local field office **PRIOR** to purchasing seed.

Have a prepared mix you'd like to use instead?

- ✓ Some vendors have great pre-made mixes. Before you purchase, check with your local field office to make sure that mix will meet the requirements for your site and contract.

Before you put the seed in the ground, make sure it matches your original list, or double check any changes with USDA. With the proper mix, your results will bloom!

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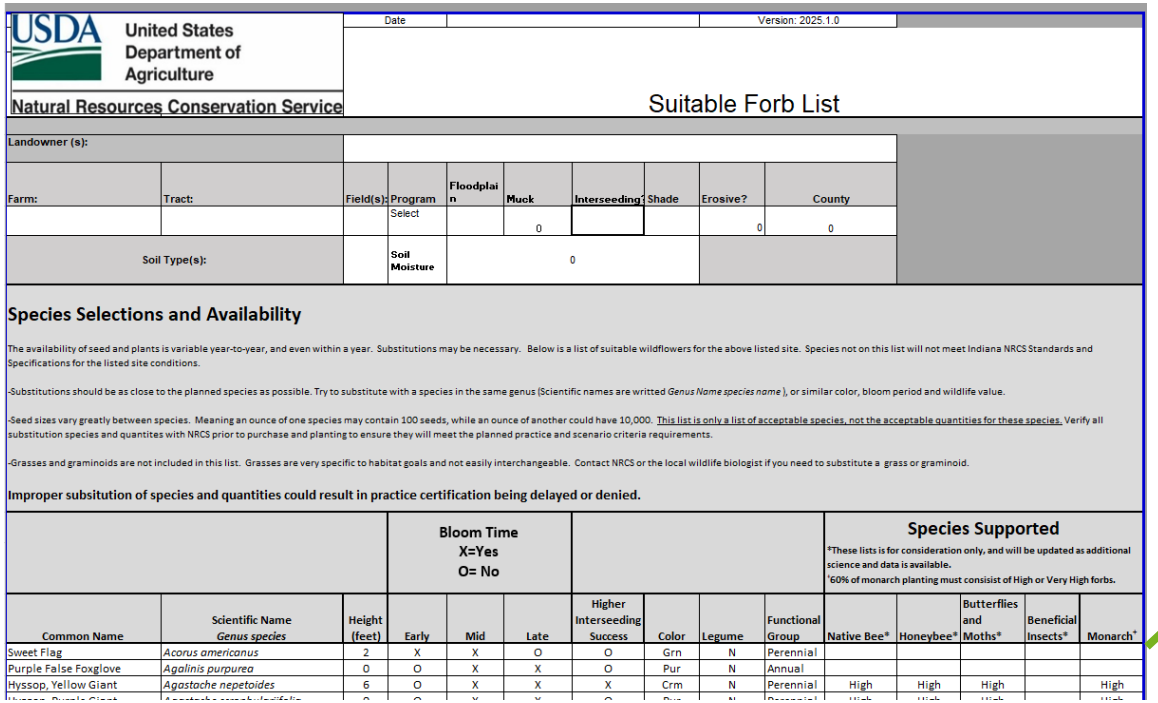
Seeding Updates

- Added information about species supported



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Date | Version: 2025.1.0

Suitable Forb List

Landowner (s):									
Farm:	Tract:	Field(s):	Program	Floodplain	Muck	Interseeding?	Shade	Erosive?	County
			Select		0			0	0
Soil Type(s):			Soil Moisture		0				

Species Selections and Availability

The availability of seed and plants is variable year-to-year, and even within a year. Substitutions may be necessary. Below is a list of suitable wildflowers for the above listed site. Species not on this list will not meet Indiana NRCS Standards and Specifications for the listed site conditions.

-Substitutions should be as close to the planned species as possible. Try to substitute with a species in the same genus (Scientific names are written *Genus Name species name*), or similar color, bloom period and wildlife value.

-Seed sizes vary greatly between species. Meaning an ounce of one species may contain 100 seeds, while an ounce of another could have 10,000. This list is only a list of acceptable species, not the acceptable quantities for these species. Verify all substitution species and quantites with NRCS prior to purchase and planting to ensure they will meet the planned practice and scenario criteria requirements.

-Grasses and graminoids are not included in this list. Grasses are very specific to habitat goals and not easily interchangeable. Contact NRCS or the local wildlife biologist if you need to substitute a grass or graminoid.

Improper subsitution of species and quantities could result in practice certification being delayed or denied.

			Bloom Time X=Yes O= No							Species Supported				
Common Name	Scientific Name *Genus species*	Height (feet)	Early	Mid	Late	Higher Interseeding Success	Color	Legume	Functional Group	Native Bee*	Honeybee*	Butterflies and Moths*	Beneficial Insects*	Monarch†
Sweet Flag	*Acorus americanus*	2	X	X	O	O	Grn	N	Perennial					
Purple False Foxglove	*Agalinis purpurea*	0	O	X	X	O	Pur	N	Annual					
Hyssop, Yellow Giant	*Agastache nepetoides*	6	O	X	X	X	Crm	N	Perennial	High	High	High		High

*These lists is for consideration only, and will be updated as additional science and data is available.
†60% of monarch planting must consisist of High or Very High forbs.

Species Supported

*These lists is for consideration only, and will be updated as additional science and data is available.
†60% of monarch planting must consisist of High or Very High forbs.

Native Bee*	Honeybee*	Butterflies and Moths*	Beneficial Insects*	Monarch†
High	High	High		High
High	High	High		High
High				
			High	
			High	
High	High	High	High	Very High
High	High	High	High	High
High	High	High	High	Very High
High		High		
High		High		
High		High		
				High
				High

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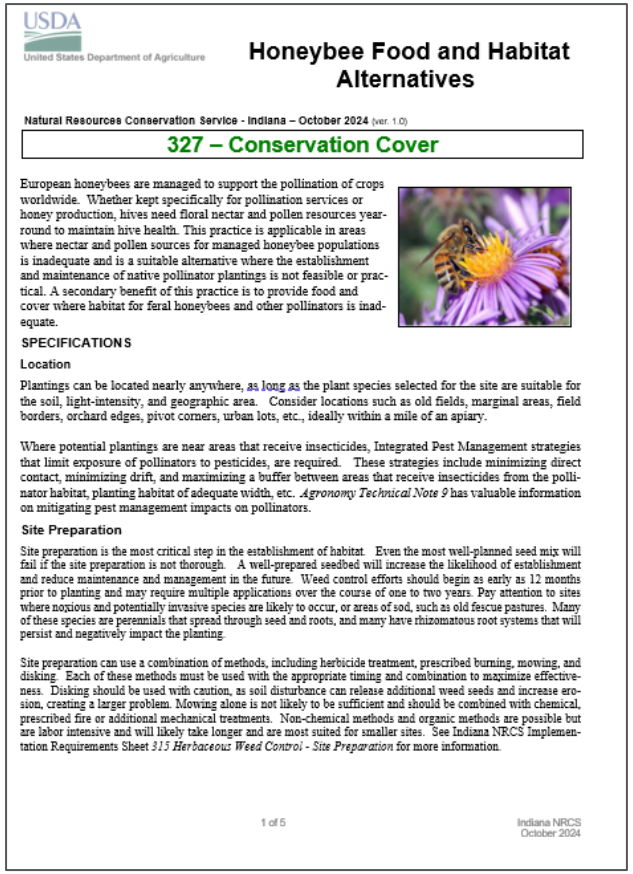
327- Conservation Cover

- Honeybees- introduced species
- Update to IR
- Increased species selection

Required Species (1 grass and at least 3 legumes)	**Pounds per Acre (Pure Live Seed)**
Timothy (or Orchardgrass)	1.5 (2.5)
Alfalfa	2.0
White clover (Ladino or Dutch)	3.0
Alsike clover	4.0
Red Clover	3.0
Optional *additional* species**	**Maximum Pounds per Acre (Pure Live Seed)**
Buckwheat	6.0
Forage chicory	5.0
Lacy Phacelia	1.0
Flax	2.0
Sunflower	4.0
Borage	0.5
Brassicas (kale, canola, mustard, turnip)	1.0
Hairy Vetch	5



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Honeybee Food and Habitat Alternatives

Natural Resources Conservation Service - Indiana – October 2024 (ver. 1.0)

327 – Conservation Cover

European honeybees are managed to support the pollination of crops worldwide. Whether kept specifically for pollination services or honey production, hives need floral nectar and pollen resources year-round to maintain hive health. This practice is applicable in areas where nectar and pollen sources for managed honeybee populations is inadequate and is a suitable alternative where the establishment and maintenance of native pollinator plantings is not feasible or practical. A secondary benefit of this practice is to provide food and cover where habitat for feral honeybees and other pollinators is inadequate.

SPECIFICATIONS

Location

Plantings can be located nearly anywhere, as long as the plant species selected for the site are suitable for the soil, light-intensity, and geographic area. Consider locations such as old fields, marginal areas, field borders, orchard edges, pivot corners, urban lots, etc., ideally within a mile of an apiary.

Where potential plantings are near areas that receive insecticides, Integrated Pest Management strategies that limit exposure of pollinators to pesticides, are required. These strategies include minimizing direct contact, minimizing drift, and maximizing a buffer between areas that receive insecticides from the pollinator habitat, planting habitat of adequate width, etc. *Agronomy Technical Note 9* has valuable information on mitigating pest management impacts on pollinators.

Site Preparation

Site preparation is the most critical step in the establishment of habitat. Even the most well-planned seed mix will fail if the site preparation is not thorough. A well-prepared seedbed will increase the likelihood of establishment and reduce maintenance and management in the future. Weed control efforts should begin as early as 12 months prior to planting and may require multiple applications over the course of one to two years. Pay attention to sites where noxious and potentially invasive species are likely to occur, or areas of sod, such as old fescue pastures. Many of these species are perennials that spread through seed and roots, and many have rhizomatous root systems that will persist and negatively impact the planting.

Site preparation can use a combination of methods, including herbicide treatment, prescribed burning, mowing, and disking. Each of these methods must be used with the appropriate timing and combination to maximize effectiveness. Disking should be used with caution, as soil disturbance can release additional weed seeds and increase erosion, creating a larger problem. Mowing alone is not likely to be sufficient and should be combined with chemical, prescribed fire or additional mechanical treatments. Non-chemical methods and organic methods are possible but are labor intensive and will likely take longer and are most suited for smaller sites. See Indiana NRCS Implementation Requirements Sheet *315 Herbaceous Weed Control - Site Preparation* for more information.

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Indiana NRCS
October 2024

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Upcoming Changes

- **2025**
  - **646 Shallow Water Development and Management = 646 Seasonal Water Management for Wildlife**
    - **Management only practice. Development will move to wetland practices**
  - **657 Wetland Restoration**
    - **Strictly engineering now, vegetation will be addressed with 420 or 612**
  - **422 Hedgerow**
    - **Purposes consolidated**
    - **Beetle Banks added as part of IPM- can use bunch grasses**
    - **Wildlife purpose will not include bunchgrasses.**
- **Beyond 2025**
  - **645/644 Upland and Wetland Wildlife Habitat Management will become Wildlife Habitat Management**

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Questions?

Brianne Lowe
State Biologist
USDA-NRCS

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